

CLAIMS

1. A method for providing security comprising:

providing a tamper-indicating device in a security risk detection position between at least two components, at least one of which is a security-sensitive component, said tamper-indicating device including a tamper-responsive section defining an intact and a non-intact condition wherein relative movement of the two components causes the tamper-responsive section to assume the non-intact condition and indicates a possible security risk occurrence; and

wirelessly interrogating said tamper-indicating device to determine whether the tamper responsive section is in the intact or non-intact condition.

2. The method of claim 1 further comprising modulating a wirelessly received interrogation signal with the tamper-indicating device and transmitting a modulated response depending on whether the tamper-responsive section is in the intact or non-intact condition.

3. The method of claim 2 wherein a plurality of tamper-indicating devices are provided and the modulated response includes an identifier of the tamper-indicating device.

4. The method of claim 2 wherein wirelessly interrogating includes wirelessly energizing said tamper-indicating device with the interrogating signal.

5. The method of claim 4 wherein energizing current from the interrogating signal provides the modulated response to the interrogating signal when the tamper-responsive section is in the intact condition.

6. The method of claim 1 wherein said tamper-indicating device includes an elongate strip having at least one weakened location, said method further comprising adhering said elongate strip to said components with the at least one weakened location between or adjacent the components.

7. A system for providing security comprising:

a tamper-indicating device including a tamper-responsive section and a tamper-signaling section, the tamper-responsive section defining a damage-sensitive portion between first and second coupling portions,

wherein the tamper indicating device is operable to be placed in a security risk detection position having the first and second coupling portions operably coupled to two components, at least one of which is a security sensitive component,

wherein the damage sensitive portion defines an intact and a non-intact condition wherein the non-intact condition indicates a possible security risk occurrence when the tamper indicating device is placed in the security risk detection position;

a wireless interrogation device operable to provide a wireless interrogation signal to said tamper-indicating device, wherein the tamper-signaling section is operable to wirelessly transmit a response signal in response to the interrogation signal dependant on whether the damage-sensitive portion is

in the intact or non-intact condition; and

a receiver configured to receive the response signal.

8. The system of claim 7 wherein the interrogation device is operable to wirelessly energize the tamper-signaling section.

9. The system of claim 7 wherein the coupling portions include adhesive.

10. The system of claim 7 wherein said tamper-indicating device includes an elongate strip having at least one weakened location in the damage sensitive portion.

11. The system of claim 10 wherein a plurality of spaced weakened locations are between the first and second coupling portions.

12. The system of claim 11 wherein the weakened locations include serrated portions.

13. A method of remotely monitoring the status of multiple fire extinguishers, the method comprising:

coupling sensors to respective fire extinguishers in sensing relation to the fire extinguishers, the sensors each being configured to sense a parameter of the fire extinguisher to which it is coupled;

associating transmitters with respective fire extinguishers, the transmitters being configured to selectively transmit information identifying the fire extinguisher with which the transmitter is associated and to selectively transmit information indicative of the sensed parameter;

providing a receiver in selective wireless communications with the transmitters; and

providing a computer coupled to the receiver, the computer being configured to maintain testing schedules for respective fire extinguishers and being configured to provide an output when it is time for an extinguisher to be inspected, tested, or undergo maintenance, the computer also being configured to selectively store information from a plurality of the transmitters.

14. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 wherein at least one of the transmitters is configured to communicate with the receiver via another of the transmitters.

15. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 wherein at least one of the sensors is configured to sense if the associated fire extinguisher is moved.

16. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 wherein at least one of the sensors is configured to sense movement of a fire extinguisher trigger pin relative to a fire extinguisher trigger.

17. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 wherein at least one of the sensors is configured to sense fire extinguisher pressure.

18. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 and further comprising defining at least some of the transmitters using radio frequency identification devices that respectively include a transmitter, a processor coupled to the transmitter, and a battery coupled to supply power to the transmitter and processor, and that are configured to selectively identify themselves to the receiver.

19. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 and further comprising using a radio frequency identification device to define one of the transmitters and also define a sensor.

20. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 and further comprising using a radio frequency identification device to define one of the transmitters and also defining a sensor to sense if the associated fire extinguisher is moved, the radio frequency identification device including a conductor configured to be broken in response to movement of the associated fire extinguisher.

21. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 13 wherein at least some of the transmitters are defined by transceivers.

22. A system for remotely monitoring the status of a fire extinguisher, the fire extinguisher having a trigger and a trigger pin arranged such that the trigger pin must be removed before the trigger can be operated, the system comprising:

a tamper-indicating device including a tamper-responsive section and a tamper-signaling section, the tamper-responsive section defining a damage-sensitive portion between first and second coupling portions, the damage sensitive portion being in either an intact and a non-intact condition, the first coupling portion being adapted to be coupled to the trigger pin and the second coupling portion being adapted to be coupled external of the trigger pin of the fire extinguisher, the tamper-signaling section being configured to selectively transmit information indicating whether the damage sensitive portion is in the intact or non-intact condition.

23. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 22 wherein the tamper-signaling section is further configured to identify the fire extinguisher.

24. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 22 and further including means for sensing if the fire extinguisher is moved.

25. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 22 and further comprising a second tamper-indicating device including a tamper-responsive section, the tamper-responsive section of the second tamper-indicating device defining a second damage sensitive portion between third and fourth coupling portions, the second damage sensitive portion being in either an intact and a non-intact condition, the third coupling portion being adapted to be coupled to the fire extinguisher and the second coupling portion being adapted to be coupled external of the fire extinguisher.

26. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 25 wherein the second tamper-indicating device includes a tamper-signaling section coupled to the tamper-responsive section of the second tamper-indicating device, the tamper-signaling section of the second tamper-indicating device being configured to selectively transmit information indicating whether the second damage sensitive portion is in the intact or non-intact condition.

27. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 22 and further including means for sensing fire extinguisher pressure.

28. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 22 wherein the tamper-signaling section is defined by a radio frequency identification device that includes a transmitter, a processor coupled to the transmitter, and a battery coupled to supply power to the transmitter and processor, and that is configured to selectively identify itself.

29. A system for remotely monitoring the status of a fire extinguisher in accordance with claim 22 wherein the tamper-signaling section is defined by a transceiver.

30. A system for remotely monitoring if a fire extinguisher is moved, the system comprising:

a tamper-indicating device including a tamper-responsive section and a tamper-signaling section, the tamper-responsive section defining a damage-sensitive portion between first and second coupling portions, the damage sensitive portion being in either an intact and a non-intact condition, the first coupling portion being adapted to be coupled to the fire extinguisher and the second coupling portion being adapted to be fixed to a surface external of the fire extinguisher, the tamper-signaling section being configured to selectively transmit information indicating whether the damage sensitive portion is in the intact or non-intact condition.

31. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 30 wherein the tamper-signaling section is further configured to identify the fire extinguisher with which the first coupling portion of the tamper-indicating device is coupled.

32. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 30 and further multiple tamper-indicating devices coupled to respective fire extinguishers, and a common interrogator configured to selectively communicate with the tamper-signaling section of any of the tamper-indicating devices.

33. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 30 and further comprising a second tamper-indicating device including a tamper-responsive section, the tamper-responsive section of the second tamper-indicating device defining a second damage sensitive portion between third and fourth coupling portions, the second damage sensitive portion being in either an intact and a non-intact condition, the third coupling portion being adapted to be coupled to a trigger pin of the fire extinguisher and the second coupling portion being adapted to be coupled to a fixed surface external of the trigger pin of the fire extinguisher, the second tamper-indicating device including a tamper-signaling section coupled to the tamper-responsive section of the second tamper-indicating device, the tamper-signaling section of the second tamper-indicating device being configured to selectively transmit information indicating whether the second damage sensitive portion is in the intact or non-

intact condition.

34. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 33 and further comprising a common interrogator configured to selectively communicate with the tamper-signaling section of either of the tamper-indicating devices.

35. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 30 and further including means for sensing fire extinguisher pressure.

36. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 30 wherein the tamper-signaling section is defined by a radio frequency identification device that includes a transmitter, a processor coupled to the transmitter, and a battery coupled to supply power to the transmitter and processor, and that is configured to selectively identify itself.

37. A system for remotely monitoring if a fire extinguisher is moved in accordance with claim 30 wherein the tamper-signaling section is defined by a transceiver.

38. A method of remotely monitoring the status of multiple fire extinguishers, the method comprising:

associating transceivers with respective fire extinguishers, with at least some of the transceivers configured to cause an alarm signal in response to a fire extinguisher being moved, and with at least some of the transceivers configured to cause an alarm signal in response to extinguisher pressure below a predetermined threshold, the transceivers being configured to store and selectively transmit information identifying the fire extinguisher with which the transceiver is associated;

providing an interrogator in selective wireless communication with the transceivers; and

providing a computer coupled to the interrogator, the computer being configured to maintain inspection, testing, maintenance schedules for respective fire extinguishers and being configured to provide an output when it is time for an extinguisher to be inspected, tested, or undergo maintenance, the computer also being configured to provide an output in response to an alarm signal being generated.

39. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 38 wherein at least one of the transponders is configured to communicate with the computer via another of the transponders.

40. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 38 wherein associating transceivers comprises configuring at least one of the transceivers to send an alarm signal in response to the associated fire extinguisher being moved.

41. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 38 and further comprising defining the transceivers using radio frequency identification devices that respectively include a transceiver, a processor coupled to the transceiver, and a battery coupled to supply power to the transceiver and processor, and that are configured to identify themselves to the computer.

42. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 38 and further comprising using a radio frequency identification device to define one of the transceivers and also to cause an alarm signal in response to the associated fire extinguisher being moved, the radio frequency identification device including a conductor configured to be broken in response to movement of the associated fire extinguisher such that the radio frequency identification device is no longer able to communicate with the computer, and wherein such inability to communicate causes the computer to generate an alarm signal.

43. A method of remotely monitoring the status of multiple fire extinguishers in accordance with claim 38 wherein a plurality of transponders are configured to communicate with the computer via another of the transponders.

44. A system for remotely monitoring the status of multiple fire extinguishers, the system comprising:

transceivers configured to be associated with respective fire extinguishers, with at least some of the transceivers configured to cause an alarm signal in response to a fire extinguisher being moved, and with at least some of the transceivers configured to cause an alarm signal in response to extinguisher pressure below a predetermined threshold, the transceivers being configured to store and selectively transmit information identifying the fire extinguisher with which the transceiver is associated;

an interrogator in selective wireless communication with the transceivers;
and

a computer coupled to the interrogator, the computer being configured to maintain inspection, testing, or maintenance schedules for respective fire extinguishers and being configured to provide an output when it is time for an extinguisher to be inspected, tested, or undergo maintenance, the computer also being configured to provide an output in response to an alarm signal being generated.

45. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 44 wherein at least one of the transponders is configured to communicate with the computer via another of the transponders.

46. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 44 wherein at least one of the transceivers is configured to send an alarm signal in response to the associated fire extinguisher being moved.

47. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 44 and further comprising defining the transceivers using radio frequency identification devices that respectively include a transceiver, a processor coupled to the transceiver, and a battery coupled to supply power to the transceiver and processor, and that are configured to identify themselves to the computer.

48. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 44 wherein at least one of the transceivers is defined by a radio frequency identification device, and wherein the radio frequency identification device is also configured to cause an alarm signal in response to the associated fire extinguisher being moved, the radio frequency identification device including a conductor configured to be broken in response to movement of the associated fire extinguisher such that the radio frequency identification device is no longer able to communicate with the computer, and wherein such inability to communicate causes the computer to generate an alarm signal.

49. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 44 wherein at least one of the transponders is configured to communicate with the computer via another of the transponders.

50. A system for remotely monitoring the status of multiple fire extinguishers, the system comprising:

sensors configured to sense removal, or tampering, of trigger pins of respective fire extinguishers;

wireless transmitters coupled to respective sensors and configured to selectively transmit whether the trigger pin of the respective fire extinguisher has been removed or tampered with; and

a receiver configured to selectively receive the transmissions for the multiple fire extinguishers at a common location.

51. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 50 and further comprising a computer coupled to the receiver and configured to maintain inspection, testing, and maintenance schedules for the respective fire extinguishers and to provide a signal when it is time for one of the fire extinguishers to be tested.

52. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 50 and further comprising a sensor, coupled to one of the wireless transmitters, configured to sense if one of the fire extinguishers is moved.

53. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 51 and further comprising a sensor, coupled to one of the wireless transmitters, configured to sense fire extinguisher pressure.

54. A system for remotely monitoring the status of multiple fire extinguishers in accordance with claim 51 wherein the wireless transmitters are defined by respective radio frequency identification devices that each include a transmitter, a processor coupled to the transmitter, and a battery coupled to supply power to the transmitter and processor, wherein the receiver is defined by an interrogator, and wherein the radio frequency identification devices are configured to selectively identify themselves to the interrogator in response to an interrogation signal from the interrogator.